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European consortium counts on INEGI to create brain-controlled prostheses

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Imagine a prosthetic arm or leg with a direct connection to the human nervous system, allowing the **robotic limb to perform movements controlled by the brain**. It is a technological advance that would help **people with amputated limbs or paralysis recover their motor and sensory functions**, and it is the focus of a new European project that has the contribution of INEGI.

The project aims to **develop a new generation of implantable bidirectional electrodes** for connecting the human nervous system with external mechatronic devices, such as exoskeletons and exoprostheses. A bet that promises to open up new possibilities for those who face physical challenges.

Joana Machado, responsible for the project at INEGI, explains that the Institute's team will "contribute to the development of mechatronics". They will develop actuator blocks, which, as the person responsible explains, "are sets of micromotors responsible for the movement of the prostheses".

The design, prototyping and testing of three demonstrator devices are planned and intended for different categories of patients: those with forearm amputation, those with paralysis of both lower limbs and those with paralysis of one leg. This is an important advance to make this technology more robust and **accelerate the creation and commercialization of prosthetics that better simulate the real limb**.

The project officially started at the beginning of July at a meeting in Bucharest, Romania, which brought together the consortium of 27 entities involved.

The [NerveRepack \(http://www.nerverepack.eu/\)](http://www.nerverepack.eu/) - Intelligent neural system for bidirectional connection with exoprostheses and exoskeletons project is co-financed by Horizonte Europa, the European Union's 2021-2027 R&I funding framework program, and by FCT - Fundação para a Ciência e a Tecnologia.

TOP

INEGI

Campus da FEUP
Rua Dr. Roberto Frias, 400
4200-465 Porto

[inegi@inegi.up.pt \(mailto:inegi@inegi.up.pt\)](mailto:inegi@inegi.up.pt)
[+351 229 578 710 \(tel:+351 229 578 710\)](tel:+351229578710)

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